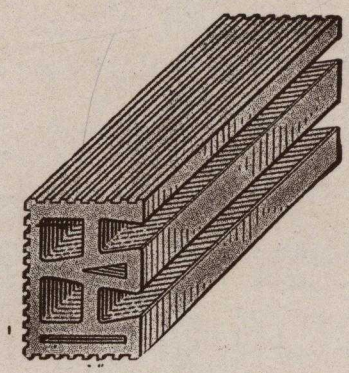
SAFETY, DURABILITY and ECONOMY for ROOFS, WALLS and CHIMNEYS

1664

Chattanooga Sewer Pipe Works

Manufacturers **Chattanooga, Tenn., U. S. A.**

The Dickey Flashing Block Insures Against Leaks

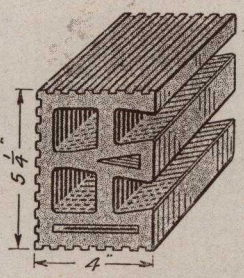


Dickey Flashing Block, 4x5¼x12 Inches.

During the many years that our Company has been manufacturing Clay Products it has been our practice to keep in close touch with builders and ascertain wherein ordinary methods of construction fail entirely or eventually result in expensive repairs.

We make practical materials adapted to conform to standard building practice; to overcome the trouble and expense usually encountered; and to provide permanent construction.

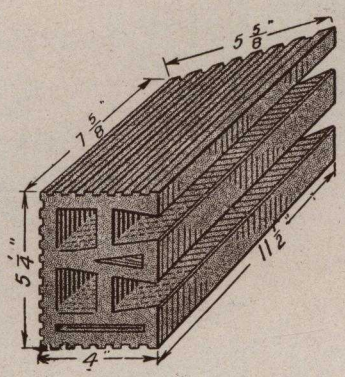
Builders have long felt the need of increasing the life of roofs and preventing unnecessary leaks. The need has been particularly emphatic with respect to a more practical method of joining the roof and wall with flashing. The insistent call for a better method caused us to design the Dickey Flashing Block, made of Vitrified Glazed Clay with the double groove.



Half Length Flashing Block.

Old Flashing Methods Unsatisfactory

The old method of nailing the roofing to a wood strip results in cracks and breaks. This is not because the roofing material is inferior, but because the nailing makes the roofing rigid and inflexible. No allowance is made for expansion and contraction, with the result that the roofing tears away from the nails. In other cases the nails rust or corrode, releasing the flashing. Leaks in roofs are usually found at the point which should be protected by the flashing.



Mitered Corner Flashing Block For Outside Corners.

The Dickey Flashing Block with the double groove provides an anchorage for double flashing, receiving the base flashing or the roofing into the lower groove, where it is attached but not fastened rigidly. The upper groove provides a rigid anchorage for the cap flashing, which may be of metal or some other material. Expansion and contraction is provided for and leaks through the flashing joint successfully eliminated.

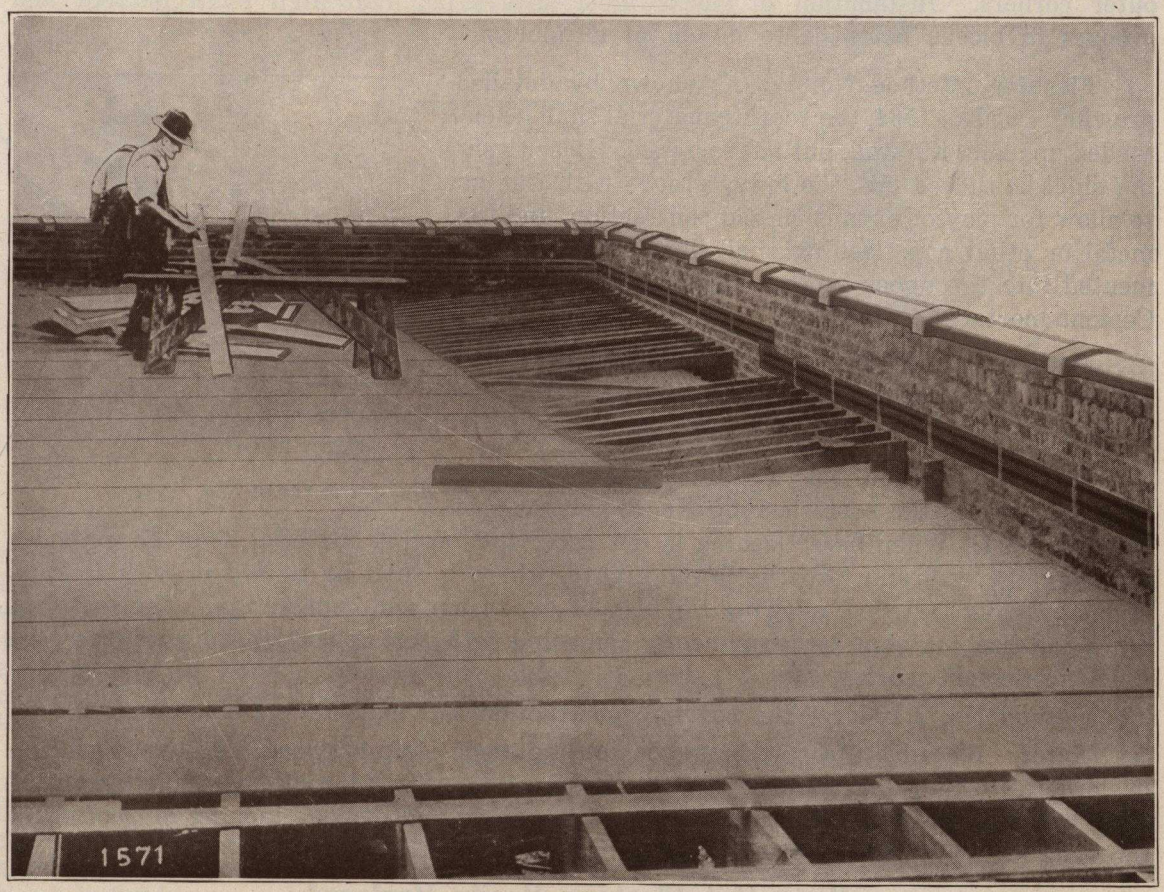
CHATTANOOGA SEWER PIPE WORKS, CHATTANOOGA, TENN., U. S. A.

Copyright, 1919, by Chattanooga Sewer Pipe Works.

Economy in Cost and Maintenance Provided by Dickey Flashing Blocks

This block is made in the proper size to permit rapid construction. We also make the half length block and the mitered block for corners, as shown on the preceding page. It is thoroughly Vitrified, which makes it fire-proof. The difference in cost of a wall with the Flashing Block and plain brick wall is approximately 12c per lineal foot. This additional cost is extremely low and even that cost is offset by the labor saved in the installation of flashing. Each Flashing Block takes the place of three brick.

Roofing manufacturers endorse the use of Flashing Blocks. Their use will eliminate from 50 to 90 per cent of complaints on leaky roofs.



Dickey Flashing Blocks used in connection with special method of roof-framing. The special roof-framing shown is not required by the Dickey Flashing Block. Dickey Flashing Blocks will work to advantage with various methods of roof-framing.

Specifications for Installation of Dickey Flashing Blocks

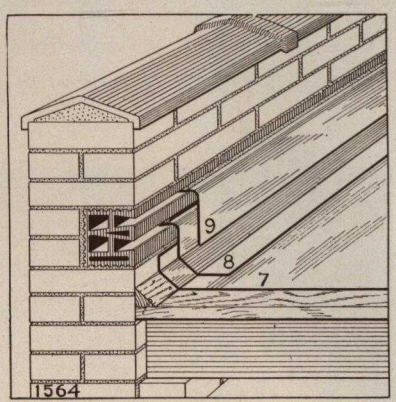
The Dickey Flashing Block securely anchors the flashing into wall and insures a joint on a par with the best roof and is unquestionably superior, in protection and durability, to other methods of attaching flashing, when used as we specify.

When Blocks are laid horizontally: Blocks shall be laid in wall as brick is built up, starting with bottom of blocks two (2) courses above high point of roof and extending on a level line until bottom of block is four (4) courses above roof, then drop the line of blocks down two (2) courses of brick (height of block) making the upper course of block overlap the lower course twelve (12) inches. Continue to drop the courses, as above, throughout the length of the wall. In all head and cross walls the blocks shall be laid across on a level line. Special mitered blocks, in pairs, shall be used for all outer angles, such as offsets and chimney breasts. Inner angles shall be constructed by butting the end of one block against the face of another so that grooves match, the end of one block extending four (4) inches into the abutting wall.

When Blocks are laid parallel to slope of roof: The brick shall be cut to conform to angulation and clipping of blocks shall be done at intersections of inner and outer corners. Installation of blocks must always begin at high point of roof and grooves in blocks be made to match at all joints.

Flashing, Method No. 1: As shown by detailed drawing, Cut No. 1564, the roofing material shall be extended up along the wall, but not fastened. Base flashing shall be tucked into the lower groove with Oakum to allow for play of expansion and contraction, and the metal or other cap flashing shall be permanently cemented into the upper groove with the best Portland Cement mortar.

Method No. 1 insures better results because of the additional base flashing, and is worth the cost of installing.



Cut No. 1564.

Flashing, Method No. 2: It is not absolutely necessary to use the base flashing No. 8, as shown in Cut No. 1564. When base flashing is not used, the roofing material shall be extended up along the wall and into the lower groove, where it shall be tucked in with Oakum, but not rigidly fastened, allowing for play of expansion and contraction. The metal or other cap flashing shall be permanently cemented into the upper groove with the best Portland Cement mortar.

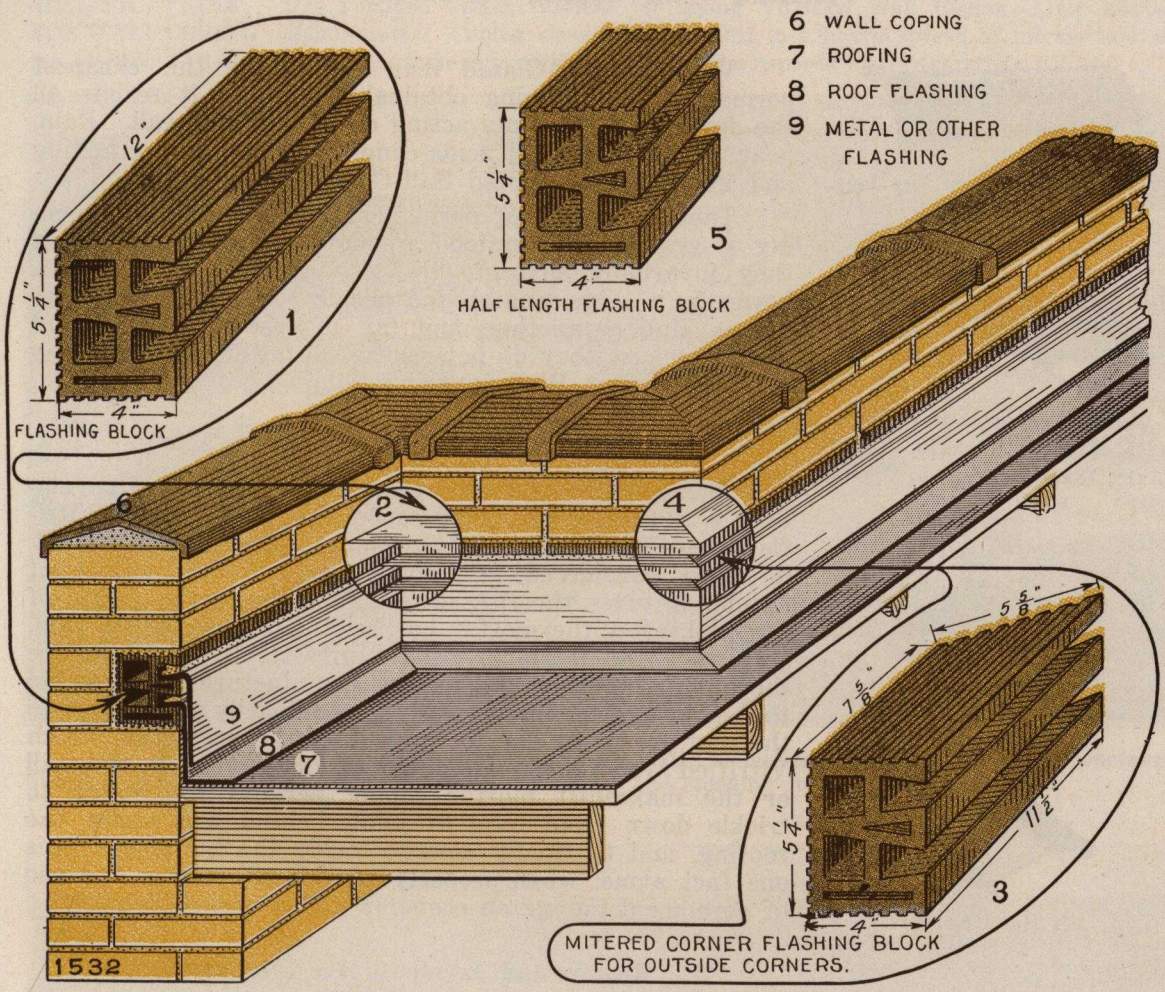
Method No. 2 reduces the cost of construction, but makes a satisfactory job.

Note: We advocate a triangular cant or angle strip of wood, 1⅛ by 2⅜ inches or larger, to be nailed securely at the intersection of wood roof sheathing and wall. This prevents bending of roofing at a sharp angle and avoids cracking of roofing or the base flashing. Illustration above fully illustrates the method.

Worn-Out Flashing Easily Replaced

This double groove block makes it possible for the roof flashing to be easily replaced in case it is worn out. Simply turn up the cap flashing while inserting a new roof flashing in place of the old one. It is not necessary, therefore, to remove the cap flashing in case you wish to replace the roof flashing.

The Dickey Flashing Block Securely Seals the Joint Between Roof and Wall



Description of the Dickey Flashing Block

Being made of Vitrified and Salt-Glazed Clay, it is everlasting and impervious to moisture. It is adapted, because of its size and shape, to easy handling and laying. It weighs approximately thirteen pounds each, and is equally practicable in walls of various thicknesses. The scorings on three sides act as clinches to hold the mortar and retain the block firmly imbedded in the wall. The slotted grooves provide an easy method of securing permanent anchorage, both for base and cap flashings. The cost is slight, considering the safety insured and that each block takes the place of three brick.

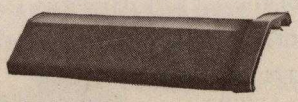
A Simple and Practical Method of Construction

In the angle at an inside corner the regular Flashing Blocks are used by butting the end of Block No. 1 against the slotted face of another Block No. 1, as shown in circle No. 2. The angle at a projecting outside corner is made with two Mitered Corner Flashing Blocks No. 3, as in circle No. 4. As necessity arises Half Length Block No. 5 is used.

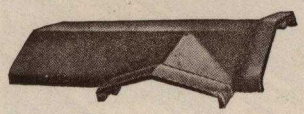
The roofing material, No. 7, is extended up along the wall, but not fastened. The base flashing No. 8 extends out 3 inches or more on the main roof deck and up into the lower slotted opening of the Flashing Block and is firmly tucked in with Oakum. The cap flashing, No. 9, of metal or other material is permanently cemented in the upper slotted opening of the Flashing Block. The result is a triple sealed joint safe, secure and reliable.

CHATTANOOGA SEWER PIPE WORKS, CHATTANOOGA, TENN., U. S. A.

Vitrified Wall Coping Necessary



Straight Coping, two feet long.



Coping Tee, made in rights or lefts, 9x9, 9x13, 9x18, 13x13, 13x18, 18x18 inches.

Right Hand Corner.

Left Hand Corner.

Closed End.

Starter.

Straight Coping and Fittings, made in three sizes to fit 9-inch, 13-inch and 18-inch walls.

Vitrified Salt-Glazed Wall Coping is the cheapest permanent Wall Coping obtainable, because it resists all the destructive elements acting on an exposed wall. Rain, heat, frost, snow and acids cannot affect the everlasting and impervious Vitrified Salt-Glazed Clay.

The importance of permanent Wall Coping is becoming so generally understood among practical builders that they invariably advocate the use of coping. There is, however, a large number of people who erect buildings of one kind or another, and fail to specify a permanent coping because they do not realize the utility and economy of a permanent Wall covering.

Reasons for Using Wall Coping Are Many

There are several good reasons for the use of permanent Wall Coping, and more especially for the use of Vitrified Salt-Glazed Clay Wall Coping. One reason, which is rarely considered, is that a wall without permanent Coping involves the risk of a leak through the joints of the wall, after the mortar has been disintegrated by rain, snow, heat or frost. We have investigated this feature thoroughly, and find the roofing manufacturers are agreed that a large percentage of leaks ordinarily attributed to the roof are really due to the lack of the protection which Vitrified Wall Coping provides. A small crack in the wall or the makeshift mortar coping permits the water to trickle down from joint to joint, behind and under the roofing, and to finally emerge inside the building. This one fact alone, when properly considered, makes the use of permanent Coping an economy and a necessity.

Repairs and Accidents Are Eliminated

Another sufficient reason for the use of Vitrified Wall Coping is that the wall is unfinished, both in appearance and cost, unless this Coping is used. A plain top on the wall or a top wall finished with a mortar spread has the appearance of cheapness. Eventually the top of a wall built without Coping begins to loosen and the brick fall apart and onto the roof. This lends a run-down appearance to the whole building and adds expense when repairs are made and the wall restored. In contrast to this poor appearance and added expense, note some of the photographs of buildings on following pages. They demonstrate the neatness and the finished appearance of roof and wall, where Vitrified Salt-Glazed Wall Coping has been used.

There remains to be considered the possibility of serious accident and injury due to bricks falling from a wall not finished with Coping. Such accidents cannot occur when the wall is finished with Vitrified Wall Coping.

Considered from every angle of safety, durability and economy Vitrified Wall Coping is superior to Stone or Concrete. It also has the advantage of overhanging lugs which attach and retain it more securely than a flat Coping can possibly be fastened.

Vitrified Wall Coping Maintains Unbroken Walls

SPECIFICATIONS FOR WALL COPING Use Portland Cement Mortar for laying Vitrified Wall Coping—Lime mortar disintegrates. Coping should be imbedded in a heavy spread of mortar laid on top of wall. All socket joints must be completely filled, and the exposed mortar carefully pointed.

Cut No. 1654. Photograph showing roofs and walls in business district. Note that wherever Vitrified Wall Coping was used the walls are intact and standing just as when completed.

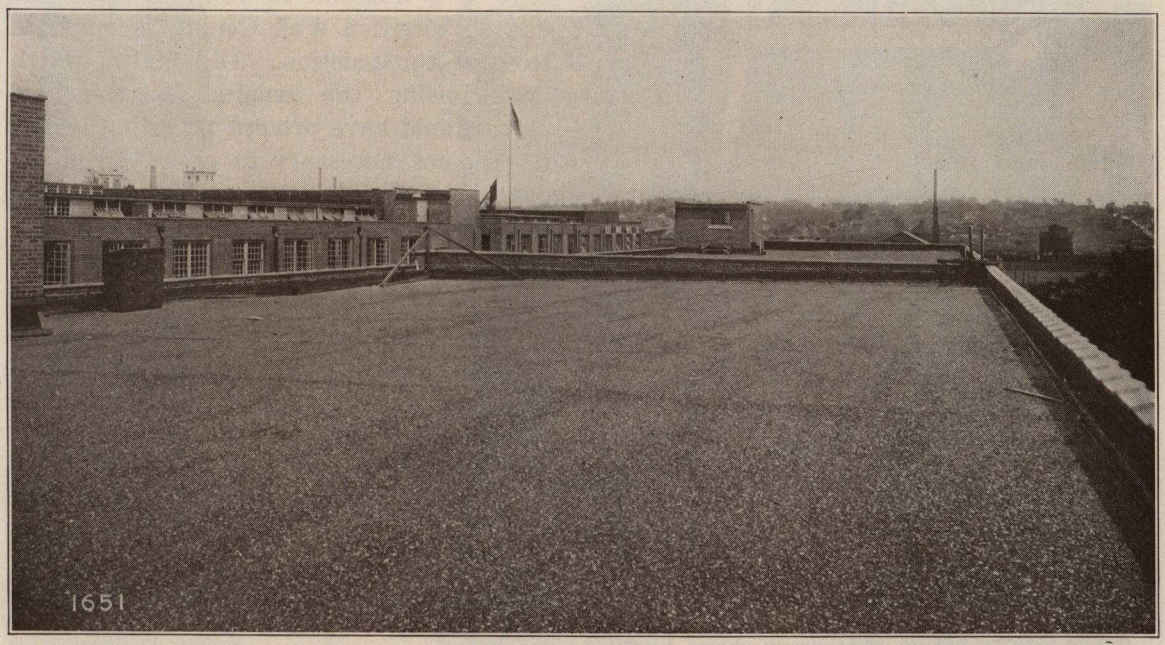
Cut No. 1650. Above picture shows a section of a Standard Oil Company Branch plant. Note the condition of the roof and walls of this building. Several thousand feet of Vitrified Wall Coping used on these walls.

Broken Walls and Unsightly Roofs Result From Lack of Coping

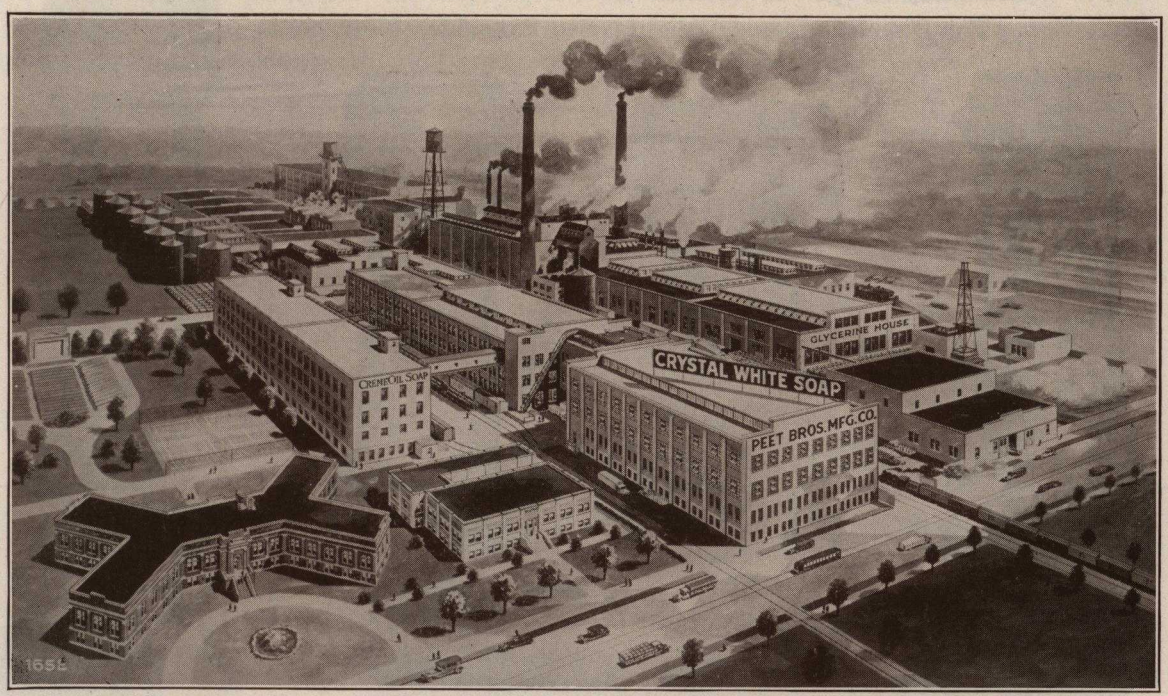
Cut No. 1061. The above picture plainly shows the necessity of proper wall protection. Notice the two walls, one unprotected and the other properly covered with Vitrified Wall Coping. The covered wall is in perfect condition, and the other has not only caused leaky roof, but several courses of brick must be taken off before it can be properly repaired.

Cut No. 1653. Note the wall where Vitrified Wall Coping was not used. This wall is already causing leaks and falling brick will sooner or later cause accidents. Wall adjoining this building is protected with Vitrified Wall Coping and is in perfect condition.

Over Six Thousand Feet of Coping on Factory Walls

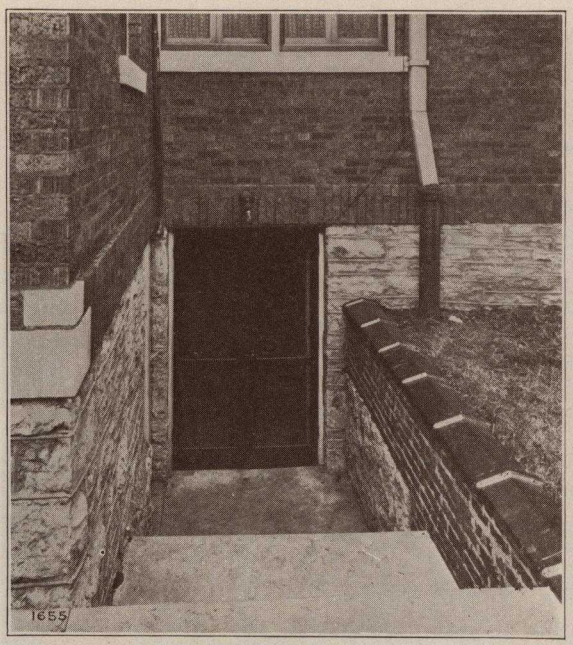


Cut No. 1651. A section of roof at Peet Brothers Soap Plant. The Vitrified Wall Coping shown on these walls is a part of the total of more than six thousand feet of Coping used throughout the plant. The value of Vitrified Coping is evidenced by the excellent condition of walls and roof.



Cut No. 1652. Complete factory and offices o f Peet Brothers Soap Plant. Over a mile of Vitrified Wall Coping was laid during the construction of the buildings.

Many Uses for Vitrified Wall Coping



Cut No. 1655. Above photograph shows Vitrified Wall Coping on the wall of a basement entrance to a fine apartment house.

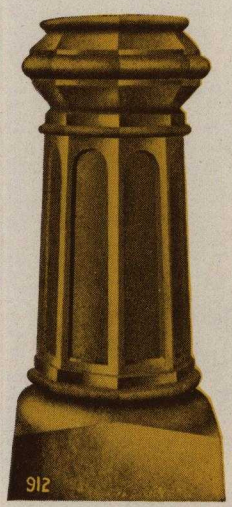
It is a mistake to conclude that the use of Vitrified Wall Coping is confined to new construction. Old walls, which are showing the results of wear and tear, should have prompt attention before it becomes necessary to go to large expense in rebuilding the walls. Vitrified Wall Coping should be used in every such case to avoid recurrence of expensive repairs.

Architects, dealers in Wall Coping and persons engaged in construction work will find many opportunities to give this valuable and practical advice to owners of buildings requiring such repairs.

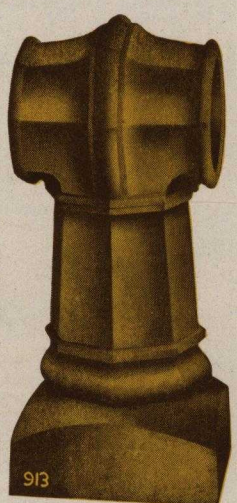
Our Vitrified Wall Coping for buildings is as well adapted to sloping and pitched walls as it is to horizontal walls. It is being used for walls of Apartments, Business Blocks, Warehouses, Hotels, Hospitals, Schools, Factories, Power Plants, Private Garages, etc. Also for retaining and garden walls.

Chimney Tops—Practical and Ornamental

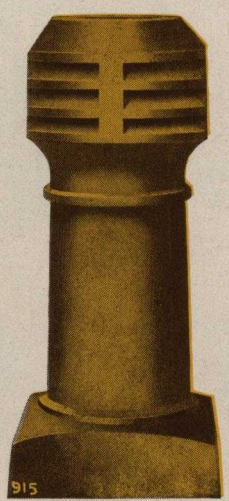
For Dimensions and Weights, See Page 12.



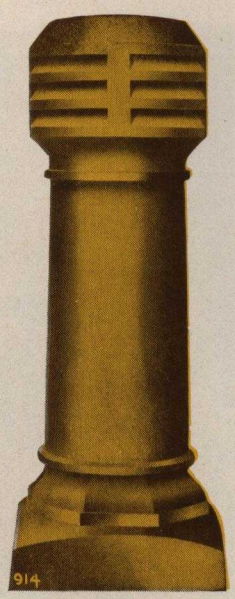
No. 1



No. 2



No. 3

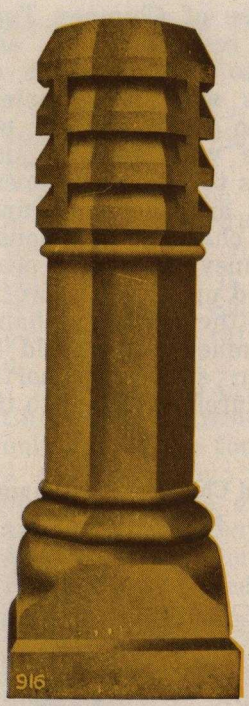


No 300

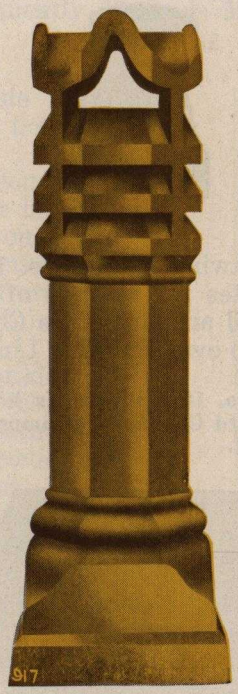
Our chimney tops are made from a mixture of fire clay, which is not affected by heat, and will not crack from changes in temperature. They are thoroughly hard burned, so that they stand the weather and last indefinitely.

As the styles illustrated are all good the selection will depend on individual taste, the type of building on which it is to be used, and the size of Flue Lining it is to fit over.

Chimney Tops—Continued



No. 4

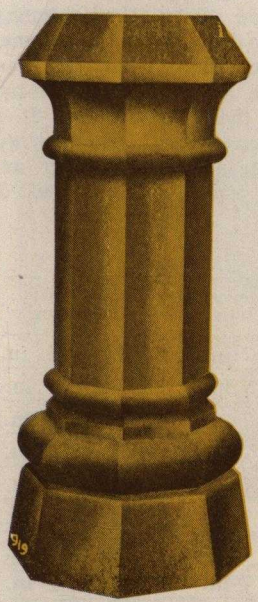


No. 5

No. 6

A chimney top adds height and finished appearance, causes better draft and prevents the unsightliness of loose brick on the top of the chimney. The Wind Guard styles, with the vented tops, are designed to promote proper draft and prevent wind blowing down the chimney, which causes bad draft.

See Cut 1673, Page 12.

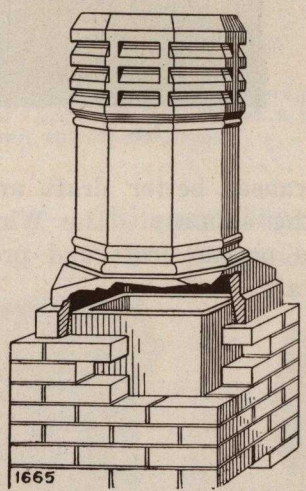


No. 7

Cut No. 1657. Photograph showing Chimney Tops on Residence.

Chimney Tops Connected With Flue Lining

Inasmuch as Flue Lining is essential to every good Chimney and Chimney Tops improve the draft, it is well to plan to combine their benefits. When doing so, it is also possible to plan to build a Chimney which will fit your Flue Lining in such a manner as to attach the Chimney Top securely to the Flue Lining, which is extended up and socketed into the base of the Chimney Top. Mortar between the base of the Chimney Top and the Flue Lining binds them together, and excludes wind currents which would reduce the efficiency of the draft.

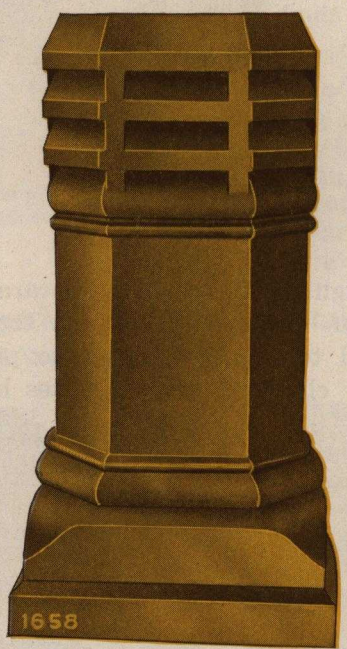


Cut No. 1665. Showing the method of setting Chimney Top, and fitting it over the Flue Lining.

No. 8

The drawing in Cut No. 1665 illustrates the method of fitting and anchoring the Chimney Top over the Flue Lining.

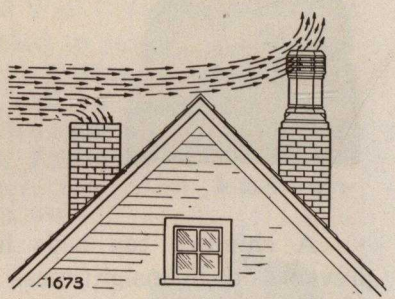
Cut No. 1673 illustrates how a Windguard Chimney Top improves the draft.



No 9.

The use of Chimney Tops is not restricted, by any means, to new chimneys or chimneys with Flue Lining. They can be placed on old chimneys with equally good results as to the improvement of draft, and the appearance of both chimney and house. Old chimneys should be neatly pointed up while the workman has the mortar at hand. The Chimney Top should be placed in sufficient mortar to be securely attached to the chimney.

Windguard Chimney Tops Improve the Draft.



The air current striking the roof beyond the low chimney is banked against the roof, with the result that the oncoming current of air is deflected down the chimney, choking the draft. With the chimney Top, the air current has free passage above the ridge line. When it strikes the Chimney Top it is deflected up through the inclined, vented slots of the windguard and out of the top, creating a draft in its wake.

Chimney Top Specifications

Top No.	Approximate Weight	Height Over All	Base Dimensions Outside	Base Dimensions Inside	Thickness of Wall at Base	Diameter Inside	Fits Over Flue Lining
1	70	30 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
2	75	30 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
300	90	36 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
3	85	30 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
4	100	40 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
5	100	40 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
6	70	30 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
7	80	36 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
8	50	12 in.	13½x13½ in.	11½x11½ in.	1 in.	7 in.	8½x 8½ in.
9	196	38½ in.	16½x24 in.	14 x18 in.	1 in.	10x14½	13 x17½ in.

Flue Lining Is as Essential as the Roof

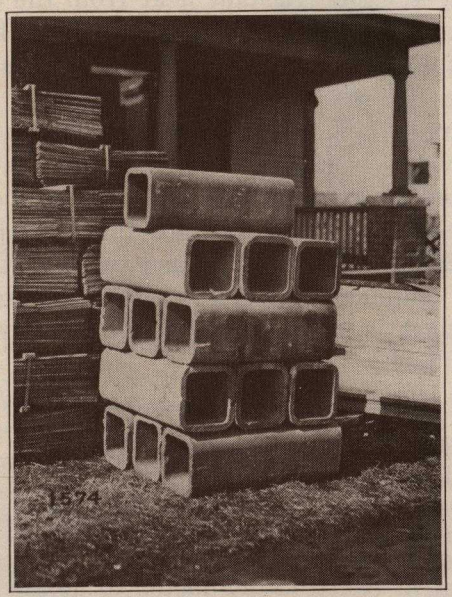
Keeping a Roof Overhead Frequently Depends More on the Flue Lining Than on the Roof Itself

In fact many a roof has gone up in smoke because Flue Lining was not used in the chimney.

A roof may be good for fifteen years or more, ordinarily, but may not last fifteen minutes, if fire breaks through the chimney. This is the case whether the roof is Shingle, Slate, Tile, Metal or Composition, if the rafters and sheathing are of wood.

As commonly practiced, the builders of Chimneys in residences really consider only one of the four essential features of a good chimney; that is to provide an outlet for smoke, gases and fumes. There are three other features just as necessary and essential. The essential features are: First, **unobstructed outlet for all smoke, gases and fumes;** second, **a proper draft** to maintain a fire which will consume the greater part of the available heat units; third, **to prevent fire** being started in the structure through cracks in the chimney, and, fourth, **to contribute to the good appearance** of the house.

Fire Clay Flue Lining makes a smooth inner passage for smoke, gases and fumes. It insures a better draft because it prevents soot from collecting, loose brick from falling into chimney and chimney cracks, all of which would reduce the draft. It prevents fire by preventing the opening of cracks in the chimney through which sparks or flame can reach combustible material. A well built chimney with Flue Lining projecting above the top will improve the appearance of the chimney when new, and will prevent the falling out of mortar, loosening of brick, and general unsightliness of the exposed chimney later.



Cut No. 1574. The owner of this cottage had the correct idea after an expensive fire caused by an unlined, defective chimney. When he rebuilt he considered Flue Lining of as great importance as the roof.

Cut No. 1669. Small Bungalow with properly constructed chimney. Two stacks of 8½x13 Flue Lining were used; one for the Furnace, the other for the Fireplace. They were separated by a 4-inch brick wall.

No chimney should be built without Fire Clay Flue Lining. Whether the chimney is part of a simple cottage or a pretentious mansion, it should invariably be lined with Flue Lining.

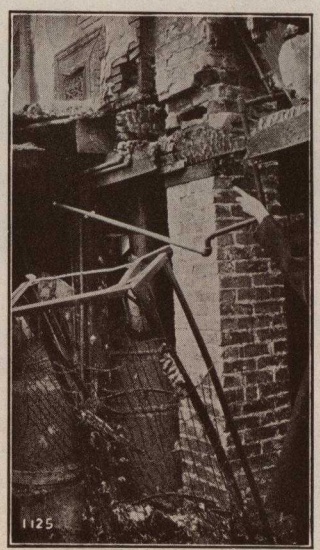
Every architect, contractor and dealer in building material owes it to his patrons to advise and even insist on the use of this essential part of a building. Flue Lining should never be considered a non-essential which may be eliminated to reduce the estimated cost of any building. It is so vital that some other material should be omitted rather than risk the danger of an unprotected chimney. Owners should specify Flue Lining and insist on its use.

Flue Lining Safeguards Against Fire

As ordinarily constructed, the chimney is almost certain to become a source of danger. The constant heat from the fire causes the mortar to become dry, so that it falls out of place, leaving cracks or holes in the chimney. Settling of the chimney has the same result. Being out of view, cracks and holes cannot be detected or known about until a fire shows the defect. It is too late then to make amends. The time to use care is when the chimney is erected. The careful method is to use Flue Lining in every chimney.

"The Great American Bonfire"

The National Board of Fire Underwriters has the most complete facilities for tabulating the fire losses of America. This Board states that the greatest contributing factor to what it terms "The Great American Bonfire" is American carelessness and lack of precaution. Their report for 1916 shows that fires "strictly preventable," caused by defective chimneys and flues resulted in a loss of $12,724,317, or 6.1 per cent of the total fire loss. This does not include many losses where no insurance was carried, or the "partly preventable" losses caused to property exposed to fires which started in defective chimneys or flues.



Fire broke through the hole in this unlined chimney. The family escaped through a window.

Fires traceable to defective chimneys and flues can be safely estimated at from 10 to 26 per cent of the grand total, and during the winter, where hot fires are kept going continually, the percentage due to defective flues has reached as high as 50 per cent.

The amount of these preventable losses would be sufficient, in a very few years, to pay for Flue Lining in every Chimney in the United States.

The statement that many of these losses were covered by insurance is not accurate, nor does it extenuate the carelessness.

The fire insurance settlement never pays for the loss of life, the nervous strain experienced during the fire, the delay and inconvenience during the time of adjustment, or the labor during the re-establishment of home or business.

Every home has wedding gifts, heirlooms, keepsakes and other priceless treasures, whose value cannot be included in an insurance policy. When lost in a fire, they cannot be replaced or the owner reimbursed. The same is true of valuable business records and equipment.

Who Pays the Bill?

A little thought will show that every loss is a total loss, insurance or no insurance, because somebody pays the bill. The gist of the whole matter is that the careful man pays the losses of the careless man through his insurance premiums. That is the reason many cities and states are enacting ordinances or laws requiring Flue Lining in all chimneys.

When the question of safe chimneys, lined with Flue Lining, is of so much importance as to require compulsory ordinances in cities which maintain efficient fire departments, it goes without argument that Flue Lining and properly built chimneys in farm homes are of much greater importance. This is so because the farm home has no organized fire protection, rarely has full insurance, and almost every fire results in complete loss. The life risk is greater, too, because no neighbors are around to arouse the family promptly.

Moral Responsibility of Builders.

Any builder, whether in city or country, who knowingly omits such an essential as Flue Lining, and carelessly excuses his negligence by saying, "Oh, it's protected by my fire insurance," is endangering lives and property in a manner it would be impossible to justify, should a fire occur. Such negligence is inexcusable, because precaution is so inexpensive and prevention so simple.

Safety and Economy With Flue Lining

Straight Flue Lining.

Opening for Pipe.

Opening for Register.

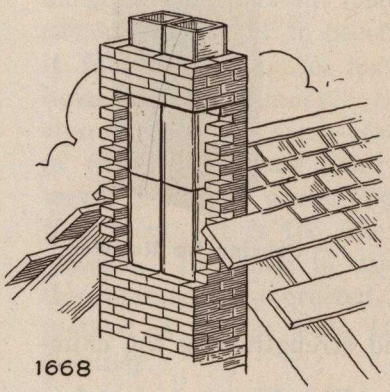
Our Flue Lining is superior for chimney construction because it is made of a special mixture of clays thoroughly burned to withstand fire and heat, and sudden or slow changes in temperature. It is not injured by fire, smoke, gases, acids, moisture or frost. It does precisely what mortar and brick fail to do.

Flue Lining serves as a fire preventive, and gives a straight flue of uniform dimensions. The ordinary brick chimney will not do this. With Flue Lining the flue has a smooth inner surface, which leaves no lodging place for soot, thus eliminating the possibility of chimney fires. The cost of Flue Lining is only nominal. It is a cheap method of preventing fire and strengthening the chimney.

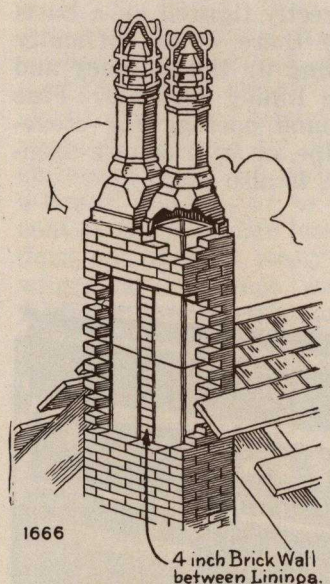
We make our Flue Lining in two-foot lengths and various sizes, suited to different requirements. Shorter lengths can be made by filling Flue Lining with sand and tapping with a sharp chisel and hammer around the lining along line where cut is desired. In this manner it can be cut any length or at any angle. The dimensions are correctly figured on a basis of brick sizes so there is no difficulty whatever in building up the chimney and the stack of Flue Lining together. Flue Lining with a round opening for stovepipe or furnace pipe, or with square opening for a register, is also made.

Cut No. 1656. A well built Business Block with Apartment Rooms above. Flue Lining is used for every chimney, whether it serves a Fireplace, a Gas Range, a Furnace or a Coal Range.

Practical Specifications for Flue Lining



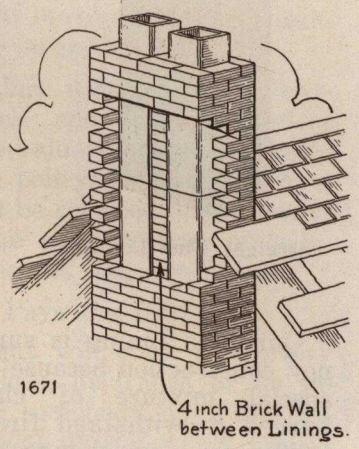
Chimneys are frequently built with stacks of Flue Lining together, but the method shown in Cut 1671, opposite, is the better practice.



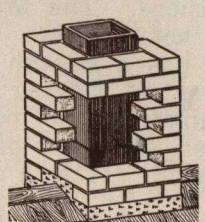
All brick chimneys shall be of hard brick and eight inches thick, if unlined, and not less than four inches if lined, and be built upon a permanent, substantial foundation and not supported on floors or woodwork. The brick shall be laid in Portland Cement mortar, which is much superior to lime mortar in resisting heat and gases. The chimney shall extend at least two feet above the ridge of a pitch roof and three feet above a sloping or flat roof. Conditions may require that the chimney be even higher than this.

Every smoke flue shall be at least 8x8 inches and have an area of not less than 64 square inches. Each flue shall be lined with hard burned Fire Clay Flue Lining, starting at the bottom of the flue or from the throat of the fireplace. The Flue Lining shall be carried up through the entire height of the chimney as it is built. Care must be taken to make the joints of the Flue Lining tight and smooth. Sufficient mortar to fill the space between bricks and Flue Lining must be slushed in as the chimney is built up. This will shut off all air currents which weaken the draft. The Flue Lining shall extend above the top of the chimney to prevent bricks falling into the chimney, and protect the mortar from gases and acids.

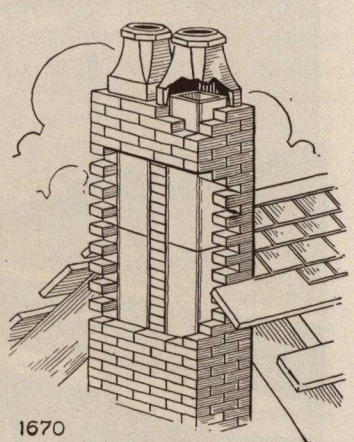
Where more than one flue is built in a chimney each shall be lined with Flue Lining and separated by a 4-inch brick wall extending the entire height of chimney. No connection shall be made between two stacks of Flue Lining throughout their entire length.



Proper method of building Chimney with two Flues. Both lined with Flue Lining and separated by brick wall.



Single Stack of Flue Lining in Chimney.



The method of setting Chimney Tops over Flue Lining is shown here and in Cut No. 1666, opposite.

Dimensions of Flue Lining

Outside Measure, Inches	Length, Feet	Weight Per Foot	No. Brick in Course
4½x 8½	2	14 lbs.	5
8½x 8½	2	20 lbs.	6
4½x13	2	18 lbs.	6
8½x13	2	30 lbs.	7
13 x13	2	38 lbs.	8
8½x17½	2	45 lbs.	8
13 x17½	2	58 lbs.	9
17½x17½	2	68 lbs.	10

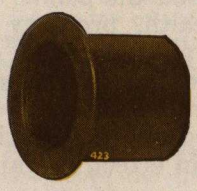
Information for Builders of Chimneys

Neither chimney nor Flue Lining shall be contracted or drawn in at top. Chimney shall be built up straight from bottom to top, unless very good reason prevents. In no case shall abrupt angles be made. The angle of offset shall never be more than thirty degrees from plumb.

A Fire Clay Stove Pipe Thimble of proper length shall extend through the brick chimney wall into the opening in the Flue Lining. Brick and mortar shall be carefully laid around Thimble to make air-tight joints.

An outlet for cleaning out ashes, soot, etc., shall be placed at bottom of each flue. Fire Clay Thimble shall be used for this purpose. All openings shall be capped when not in use.

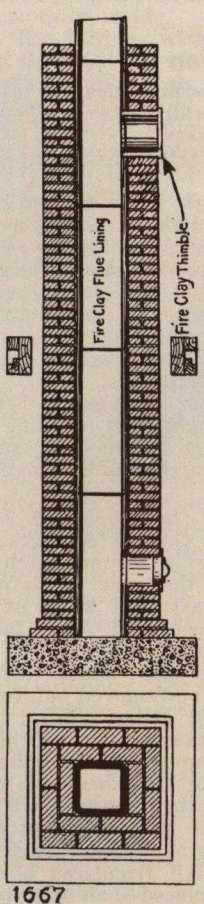
No joists, headers, studding or metal pipes shall be built into or enclosed by the chimney walls.



Fire Clay Thimbles, made in 6, 9 and 12-inch lengths, and 6, 8, 10 and 12-inch diameters.

All fireplaces and chimney breasts where mantels are placed shall have trimmer arches or other fire-proof construction supporting hearths. The arches and hearths shall be at least twenty inches in width, measured from the face of the chimney breast. The length of the trimmer arch and the length of the hearth shall be not less than the width of the chimney breast. Fire brick shall be used to line the fire back, sides, throat and walls of the ash pit.

No smoke pipe should be placed nearer than nine inches to any lath and plaster or board ceiling or wall partitions. Smoke pipes of ranges, laundry stoves or furnaces shall not be less than eighteen inches from any woodwork unless the woodwork is protected.



Cut No. 1667. Chimney Construction.

Chimney Facts

Size of Chimney Flues for Furnaces

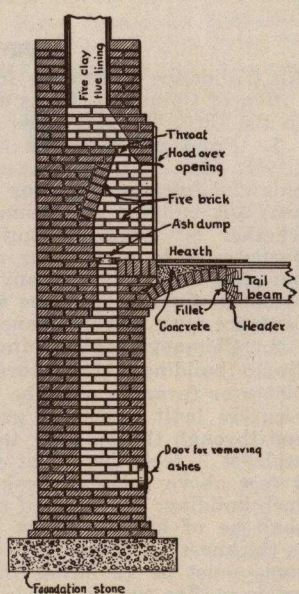
Diameter of Furnace Grate.	Height of Chimney from Inlet in Feet.		
	15 Feet.	30 Feet.	45 Feet.
18	8½x13	8½x13	8½x13
21	8½x13	8½x13	8½x13
24	13 x13	13 x13	13 x13
28	13 x17½	13 x17½	13 x13
32	17½x17½	17½x17½	13 x17½

A chimney inside a building will keep warmer and have better draft than one built in outer wall or outside the wall. A cold chimney has poor draft.

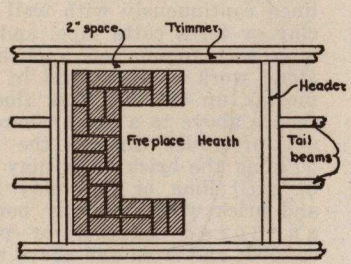
Plan chimney so as to avoid long smoke or stove pipe. Also place Thimble so furnace smoke pipe or stove pipe will pitch up to Thimble at least one inch per foot. A level pipe reduces draft.

Chimneys for soft coal or wood fires require 25 per cent more area than for hard coal.

The cheapest way to increase draft is to increase height of chimney.



Cut No. 350.



Cut No. 353. Fireplace Construction.

Flue Lining Ordinances Protect All

The losses in life and property due to defective flues have become so great and increased so much each succeeding year that states, cities and towns have been forced to enact laws and ordinances, with penalties for violations, requiring that chimneys and flues be built and lined properly.

Governing Authorities everywhere who take genuine interest in their community's welfare are becoming aroused to the danger from defective flues and are urging building laws which will prevent thoughtless, careless or uninformed builders from involving the community in serious and unnecessary losses.

These laws and ordinances are just and right and are based on the same principle as other laws which protect society by isolating contagious and infectious diseases, imprisoning the thief or criminal whose attitude and intent toward society is unsocial, caring for the dangerously insane, enforcing cleanliness and sanitation in dairies, markets and homes or preventing the promotion of schemes to defraud the public. The purpose of all these beneficial laws is to safeguard the life, health, property and happiness of the community by placing every man on an equality and requiring each to exert care and precaution for his own and his neighbors welfare. He, in turn, is benefited by the carefulness demanded of his neighbors.

We print herewith the ground work of an ordinance suggested by the National Fire Protection Association. We have many other ordinances now in effect in various cities and can furnish copy to anyone interested.

We will be pleased to offer further suggestions and help to anyone desiring to encourage the adoption of such an ordinance in his community. Anyone promoting such an ordinance is a real benefactor to his neighbors.

Chimney and Flue Ordinance

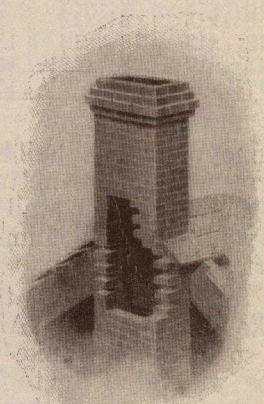
Suggested by National Fire Protection Association

An Ordinance to Provide for the Safe Construction of Chimneys, Flues and Fireplaces.

In the City, Town, Village of.....

1. From and after the.....day of ....., 19....., it shall be unlawful for any person or persons to erect in or near any building any chimney, flue, or fireplace, whether for heating, ventilating or whatsoever purpose, or to remodel or reconstruct any chimney, flue or fireplace in any building, unless such chimney, flue, or fireplace shall be erected in accordance with this Ordinance.

2. Chimneys.—All chimneys in frame buildings, for stoves, fireplaces or furnaces, shall be well and securely built from the ground up and through the building to a point at least 3 feet above flat roof and 2 feet above ridge of peak roof of such building; the walls of chimneys shall be of brick at least 8 inches in thickness (if fireplace is of stone, same must be 12 inches thick—the inside or fire surface lined with fire brick), or of brick 4 inches thick and lined continuously with well burned clay or terra cotta pipe, and beginning with foundation, such brick or stone work shall be laid in cement mortar up to the first floor, and thence above to a point where chimney protrudes through the roof of building the brick work may be laid in good lime or fire clay mortar, and brick work carefully bonded or anchored together or properly capped; and from and above the roof to top of chimney the brick work shall be laid in cement mortar. All joints shall be struck smooth on inside, except when lined with burnt clay or terra cotta pipe.



Unlined Chimneys, Cracks and Fires invariably go together.

When two or more separate flues are provided in chimney, the division walls between flues may be only 4 inches in thickness.

No chimney shall be started or built upon any floor or beam of wood.

3. Beams or Woodwork Near Chimney.—No wood casing, furring nor lath or other woodwork shall be placed in, against, or within two inches of chimney, except that wood mantels, floors and base boards, when protected by asbestos or other fire-resisting material, may come in contact with plaster covering chimney or flue.

All wood beams shall be trimmed away from chimneys.

4. Trimmer Arches.—All fireplaces and chimney breasts shall have trimmer arches to support hearths, the arches to be constructed as follows:

(a) Shall be made of bricks, stone, burnt clay or concrete. (b) The length of a trimmer arch shall not be less than the width of the chimney breast, and width at least 20 inches measured from face of chimney breast.

Wood centers under trimmer arches shall be removed before plastering ceiling underneath.

5. Fireplaces.—(a) All hearths shall be composed of incombustible material. (b) If a heater is placed in fireplace, then hearth shall be of such area as to permit of 6-inch clearance beyond heater each open side. (c) All fireplaces in which heaters are placed shall have incombustible mantels. (d) No wood mantel or other woodwork shall be exposed back of a summer piece; the iron work of the summer piece shall be placed against the brick or stone work of the

Chimney and Flue Ordinance— Continued

fireplace. (e) No fireplace shall be closed with a wood fire board. (f) When a grate is set in a fireplace, a lining of fire brick, tile or cast iron shall be added to the fire back.

6. Chimneys and flues partly or wholly outside the building shall be constructed as described in Sections 2, 3, 4, 5 and 8.

7. Chimneys and flues, in brick buildings, for fireplaces or furnaces, shall be constructed as described in Sections 2, 3, 4, 5 and 8, except that the walls of buildings when not less than 13 inches in thickness may form part of chimney.

In no case shall a chimney be corbeled out more than 8 inches from the wall, and in all cases the corbeling shall consist of at least five courses of brick. Flues in party walls shall not extend beyond the center of said walls.

When a chimney or flue is to be cut off below, in whole or in part, it shall be wholly supported by brick, stone, iron or steel work, properly erected from the ground up.

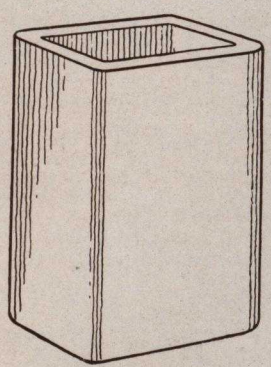
8. The upper part of chimney walls may be only 4 inches in thickness, from a point at least 6 inches above the roof-covering of building to the top of chimney, provided the chimney be capped with terra cotta, stone or cement, or the bricks are carefully bonded or anchored together.

9. At the completion of building all flues shall be properly cleaned, rubbish removed, and flues left smooth on inside.

10. The Mayor, with the consent of the Council, the Board of Selectmen, shall appoint an architect or competent builder, to be known as the chimney inspector, whose duty it shall be to examine and inspect all chimneys or flues hereafter erected, remodeled or altered.

11. Whenever a chimney shall be reported to the chimney inspector as dangerous, or discovered to be so by him, he shall at once issue a written notice to the owner thereof to forthwith repair or demolish the same.

12. The chimney inspector shall issue to the owner, architect or builder of each new, remodeled or altered chimney or flue a certificate stating that the said chimney or flue has been inspected and found to be in accordance with the regulations as herein prescribed.



Flue Lining.

13. The owner, architect or builder shall, upon receipt of the certificate mentioned in Section 12, pay to the chimney inspector a fee of..... dollars for each single chimney, and..... dollars for each chimney containing two or more flues, that may be erected, altered or remodeled by the said owner, architect or builder in or near any one building. The maximum fee to be paid to the chimney inspector for inspection service and certificate for any one building shall not exceed the sum of.....dollars, except that for any one building having more than four chimneys the fee of the chimney inspector shall be .....dollars for inspection service and certificate. All fees shall be paid into the City, Town, Village treasury weekly by the inspector.

14. For the faithful and full performance of his duties as herein prescribed the chimney inspector shall receive as compensation a salary of .....dollars per annum.

15. Any person or persons, whether owner, builder or mechanic, who shall violate any section of this Ordinance shall be deemed guilty of a misdemeanor and shall be fined not less than $10 nor more than $100 for each offense; and any chimney or flue which is built in violation of any section of this Ordinance shall be immediately demolished or rebuilt. It shall be the duty of the chimney inspector to see that this Ordinance is enforced.

16. It shall be the dutv of each owner, architect or builder to notify the chimney inspector in writing when work on any new chimney or flue, or alterations to any existing chimney or flue, has been started, and should the said owner, architect or builder fail to notify the chimney inspector until after the building containing the chimney or flue shall have been completed, he shall be required to furnish such proof as the chimney inspector shall require that the chimney is not in violation of any of the provisions of this Ordinance; or shall be required to rebuild as much of said chimney or flues as the chimney inspector shall require. The chimney inspector is hereby authorized in such cases to collect double the amount of his ordinary fee, as prescribed in Section 13.

This Ordinance shall take effect and be in force from and after the.....day of ....., 19.....

THIS MONEY SHOULD HAVE BEEN SAVED.

Cost of Fires caused by Defective Chimneys and Flues in 1916 listed by states. 1916 is the last year reported by National Board of Fire Underwriters. Complete information for later years not yet compiled.

Southeastern, Central and Rocky Mountain States.

Alamaba	$237,568
Arkansas	296,405
Colorado	91,503
Florida	157,117
Georgia	315,812
Idaho	88,046
Indiana	317,337
Iowa	331,332
Illinois	927,353
Kansas	209,588
Kentucky	330,306
Louisiana	193,429
Mississsippi	262,972
Michigan	402,133
Minnesota	257,840
Missouri	539,120
Montana	129,277
North Carolina	138,238
Nebraska	100,821
Nevada	7,803
New Mexico	32,317
North Dakota	77,622
Oklahoma	226,911
Oregon	179,379
South Carolina	171,049
Texas	415,745
Tennessee	391,910
Virginia	205,961
Utah	36,947
Wisconsin	309,349
Wyoming	7,202
Total in above states	$7,528,591

CHATTANOOGA SEWER PIPE WORKS, CHATTANOOGA, TENN., U. S. A.

5100—AZ—10-23-19—E8899.

We Manufacture the Following

Clay Products

Vitrified

Salt-Glazed Sanitary Sewer Pipe
4 in. to 30 in. diameter.

Salt-Glazed Segment Blocks
for large sewers and culverts
3 ft. to 9 ft. diameter.

Salt-Glazed Culvert Pipe.

Salt-Glazed Split Pipe
for conduits or gutters.

Salt-Glazed Well Pipe.

Salt-Glazed Meter Boxes.

Salt-Glazed Dickey Septic Tanks.

Salt-Glazed Dickey Hollow Tile Silos.

Salt-Glazed Hollow Tile Grain Tanks.

Salt-Glazed Hollow Tile Corn Cribs.

Salt-Glazed Farm Building Blocks.

Salt-Glazed Wall Coping.

Salt-Glazed Dickey Flashing Blocks.

Farm Drain Tile.

Fire Clay

Chimney Pipe.

Chimney Tops (fancy and plain).

Flue Lining.

Fire Clay.

Fire Brick.

Hollow Building Tile

Chattanooga Sewer Pipe Works

MANUFACTURERS

Chattanooga, Tenn., U. S. A.

Digitized by:

ASSOCIATION
FOR
PRESERVATION
TECHNOLOGY,
INTERNATIONAL
www.apti.org

**BUILDING
TECHNOLOGY
HERITAGE
LIBRARY**

https://archive.org/details/buildingtechnologyheritagelibrary

From the collection of:

**NATIONAL
BUILDING
ARTS
CENTER**

http://web.nationalbuildingarts.org